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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/721,262	11/26/2003	Yusuke Nakazawa	Q78598	6442
23373	7590	10/04/2006	EXAMINER	
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			LIANG, LEONARD S	
			ART UNIT	PAPER NUMBER
			2853	

DATE MAILED: 10/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/721,262

Applicant(s)

NAKAZAWA, YUSUKE

Examiner

Leonard S. Liang

Art Unit

2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 05 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1,2,5-13 and 16-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,5-13 and 16-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

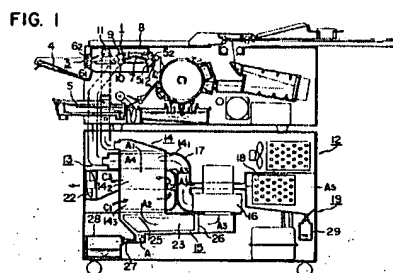
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2, 5-7, 9, 12-13, 16-20, and 22-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Katayama et al (US Pat 3997977).

Katayama et al discloses:

- {claim 1} An image recording apparatus which records an image on a recording medium, the image recording apparatus comprising in a housing thereof (figure 1; housing considered to be entire apparatus in figure 1); a water vapor removing section which removes water vapor (figure 1, reference 11; channel connected to it all the way down to figure 1, reference 26); a solvent recovering section which recovers vapor of organic solvent, which evaporates within the housing (figure 1, reference 14); wherein the water vapor removing section is provided at an inlet port which takes in air from outside of the housing into the inside of the housing (figure 1, reference 3, 11; the paper outlet port 3 inherently serves as an air inlet port; the suction port (i.e. water vapor removing port) is provided at the paper outlet port 3); the solvent recovering section is provided at an outlet port which exhausts air from the inside of the housing to the outside of the housing

(figure 1, reference 22); the inlet port and the outlet port are provided at the housing of the image recording apparatus (figure 1)



- {claim 2} wherein the vapor of organic solvent is vapor evaporated from a recording liquid for recording the image on the recording medium (column 3, line 24-column 4, line 30)
- {claim 5} wherein the housing is in a substantially sealed state except for the inlet port and the outlet port (figure 1)
- {claim 6} wherein an activated carbon filter is used as the water vapor removing section (figure 1, reference 26; column 2, lines 32-42; filter 26 considered part of water vapor removing section because it's linked to suction port 11 and used to filter mist)
- {claim 7} wherein a silica gel filter is used as the water vapor removing section (figure 1, reference 26; column 2, lines 32-42)
- {claim 9} wherein the solvent recovering section is disposed within the housing
- {claim 12} An image recording method (figure 1); removing water vapor in a housing of an image recording apparatus (figure 1, reference 11); recovering vapor of organic solvent in the housing, which evaporates within the housing (figure 1, reference 14); wherein the water vapor is removed close to an inlet

port which takes in air from an outside of the housing of the image recording apparatus into an inside of the housing of the image recording apparatus (figure 1, reference 3, 11); the solvent is recovered close to an outlet port which exhausts air from the inside of the housing of the image recording apparatus into the outside of the housing of the image recording apparatus (figure 1, reference 22)

- {claim 13} wherein the recovering of vapor of organic solvent occurs within the housing (figure 1, reference 14; if housing is viewed as entire figure 1)
- {claim 16} wherein the housing is in a substantially sealed state except for the inlet port and the outlet port (figure 1)
- {claim 17} wherein water vapor is removed with an activated carbon filter (figure 1, reference 26; column 2, lines 32-42)
- {claim 18} wherein water vapor is removed with a silica gel filter (figure 1, reference 26; column 2, lines 32-42)
- {claim 19} wherein the water vapor removing section removes water vapor from air being taken in into the housing (figure 1, reference 22; in sense that air from outside housing is re-circulated back to the fixing/drying chamber)
- {claim 20} wherein a water vapor content of air at the inlet port is higher than a water vapor content of air at a downstream side of the water vapor removing section (figure 1; if we consider reference 26 to be downstream side; there's not as much water vapor (i.e. mist) left at this point (column 5, lines 13-15))

- {claim 22} wherein the removing water vapor comprises removing water vapor from air being taken in into the housing (figure 1; because air taken from outside is re-circulated back to the fixing/drying chamber)
- {claim 23} wherein air with the water vapor removed is taken in into the inside of the housing (figure 1 because air is re-circulated)
- {claim 24} wherein the inlet port and the outlet port are provided at the housing of the image recording apparatus (figure 1, references 11 and 22)

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8, 10-11, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katayama et al (US Pat 3997977) in view of Anderson et al (US PgPub 20030179260).

Katayama et al discloses, with respect to claims 8, 10-11, and 21, an image recording apparatus (as applied to claims 1-7, 9, 12-14, 17-20, and 22-23 above).

Katayama et al differs from the claimed invention in that it does not disclose:

- {claim 8} wherein the image recording apparatus is an ink jet type image recording apparatus
- {claim 10} a head that has one or more ink channels and one or more ejection portions, wherein the head is disposed within the housing

- {claim 11} wherein the vapor of organic solvent is evaporated from ink drops ejected by the head within the housing
- {claim 21} a head comprising a plurality of ink channels and a plurality of ejection portions, wherein the head is disposed within the housing

Anderson et al discloses:

- {claim 8} wherein the image recording apparatus is an ink jet type image recording apparatus (figure 3; Anderson et al discloses a vapor handling system for ink jet print head 320)
- {claim 10} a head that has one or more ink channels and one or more ejection portions, wherein the head is disposed within the housing (naturally suggested in head 320)
- {claim 11} wherein the vapor of organic solvent is evaporated from ink drops ejected by the head within the housing (figure 3, reference 335)
- {claim 21} a head comprising a plurality of ink channels and a plurality of ejection portions, wherein the head is disposed within the housing (naturally suggested in head 320)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to replace the electrophotographic printing means of Katayama et al with the ink jet printing means of Anderson et al. The motivation for the skilled artisan in doing so is to gain the benefit of more cost effective and simpler printing means.

***Response to Arguments***

Applicant's arguments filed 09/05/06 have been fully considered but they are not persuasive.

The examiner is interpreting the entire figure 1 to be the housing. This renders the applicant's argument, that the solvent does not evaporate in the housing, moot.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Saitoh (US PgPub 20010017997 A1) discloses a carrier collection device and method therefor.

Yokota (US PgPub 20020051656 A1) discloses an electrophotographic apparatus.

Saitoh (US Pat 6418288) discloses a carrier collection device and method therefor.

Shin (US Pat 6889019) discloses a carrier vapor diluting unit of a liquid printer and liquid printer employing the same.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonard S. Liang whose telephone number is (571) 272-2148. The examiner can normally be reached on 8:30-5 Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.




Art Unit: 2853

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

09/30/06

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**STEPHEN MEIER**  
**SUPERVISORY PATENT EXAMINER**